MYCOTAXON

ISSN (print) 0093-4666 (online) 2154-8889 © 2016. Mycotaxon, Ltd.

July–September 2016—Volume 131, pp. 687–691

http://dx.doi.org/10.5248/131.687

Anaverticicladus uncinatus gen. & sp. nov. from decaying leaves from Brazil

Phelipe M.O. Costa [1], Marcela A. Barbosa [2],
Elaine Malosso [1*] & Rafael F. Castañeda-Ruiz [3]

[1] *Centro de Biociências, Depto de Micologia/Laboratório de Hifomicetos de Folhedo &*
[2] *Programa de Pós-Graduação em Biologia de Fungos,*
Universidade Federal de Pernambuco, Avenida da Engenharia, s/n,
Cidade Universitária, 50740-600, Recife, PE, Brazil
[3] *Instituto de Investigaciones Fundamentales en Agricultura 'Alejandro de Humboldt' (INIFAT),*
Calle 1 Esq. 2, C.P. 17200, Santiago de Las Vegas, C. Habana, Cuba
* Correspondence to: *elaine.malosso@ufpe.br*

Abstract—*Anaverticicladus uncinatus*, collected from decaying leaves in Brazil, is described and illustrated as a new genus and species. It is distinguished by conidiophores that are differentiated, unbranched, erect or prostrate, septate, and pale brown, conidiogenous cells that are monoblastic, terminal, curved to uncinate near the conidiogenous locus, and cylindrical or subulate, and conidia that are solitary cylindrical-fusiform, uncinate, smooth at the base but coarsely verruculose elsewhere, 5–17-euseptate, and golden brown. Conidial secession is schizolytic.

Key words—rainforest, neotropic, taxonomy

Introduction

The diversity of conidial fungi in the Brazilian Atlantic Forest has received little attention (Flora do Brasil 2016). During a survey of hyphomycetes associated with decaying plant materials in Pernambuco State, a conspicuous fungus was collected that shows remarkable differences from all previously described genera (Seifert et al. 2011) and is described here as new.

Materials & methods

Samples of submerged litter were placed in plastic bags for transport to the laboratory, where they were treated according to Castañeda-Ruiz et al. (2016). Attempts

to obtain this species in pure culture were unsuccessful. Mounts were prepared in 90% lactic acid. Anatomical features were measured at a 1000× magnification under a Nikon Eclipse Ni-U microscope using bright field optics and photographed using DIC optics with a Nikon DS-Fi2 digital camera. The holotype was deposited in the Herbarium of Universidade Federal de Pernambuco, Recife, Brazil (URM).

Taxonomy

Anaverticicladus P.M.O. Costa, Malosso & R.F. Castañeda, **gen. nov.**

MycoBank MB 816930

Differs from *Verticicladus* by its unbranched conidiophores, uncinate or curved conidiogenous cells, and schizolytic conidial secession.

Type species: *Anaverticicladus uncinatus* P.M.O. Costa et al.

Etymology: Greek, *ana*-, meaning upwards; Latin *verticicladus* referring to the hyphomycete genus *Verticicladus*.

Asexual fungi. Conidiophores differentiated, erect or prostrate, unbranched, septate, pale brown. Conidiogenous cells monoblastic, curved to uncinate, integrated, determinate. Conidial secession schizolytic. Conidia solitary, acrogenous, cylindrical-fusiform, euseptate, pale brown, subconical truncate at the base.

Anaverticicladus uncinatus P.M.O. Costa, Malosso & R.F. Castañeda, **sp. nov.**

Figs 1–2

MycoBank MB 816931

Differs from all *Verticicladus* spp. by its unbranched slender conidiophores, its uncinate or slightly curved conidiogenous loci, and its euseptate conidia that secede schizolytically.

Type: Brazil, Pernambuco State: Bonito, Mata da Chuva, 8°30′S 35°42′W, on decaying leaves of unidentified plants, 3.III.2016, coll. P.O. Costa (**Holotype**: URM 89939).

Etymology: Latin, *uncinatus*, meaning hook-shaped.

Colonies on the natural substratum effuse, hairy, yellowish-brown. Mycelium mostly superficial, composed of septate, anastomosing or slightly branched, 2–3 µm diam., smooth, pale brown hyphae. Conidiophores differentiated, mononematous, unbranched, erect or prostrate, bent or flexuous, slender, pale brown or brown, subhyaline or very pale brown toward the apex, smooth, 0–3-septate, 40–70 × 3–4 µm. Conidiogenous cells monoblastic, integrated, terminal, determinate, subulate, curved to uncinate near and just before the conidiogenous loci, 15–20 × 3 µm, pale brown. Conidial secession schizolytic. Conidia solitary, acrogenous, 5–17-euseptate, 45–140 × 5–9 µm, cylindrical-fusiform, uncinate or curved at the conical-truncate, smooth-walled basal cell, 7–12 × 2–3 µm, remaining wall verruculose toward the attenuated, narrowly obtuse apex, golden brown, dry.

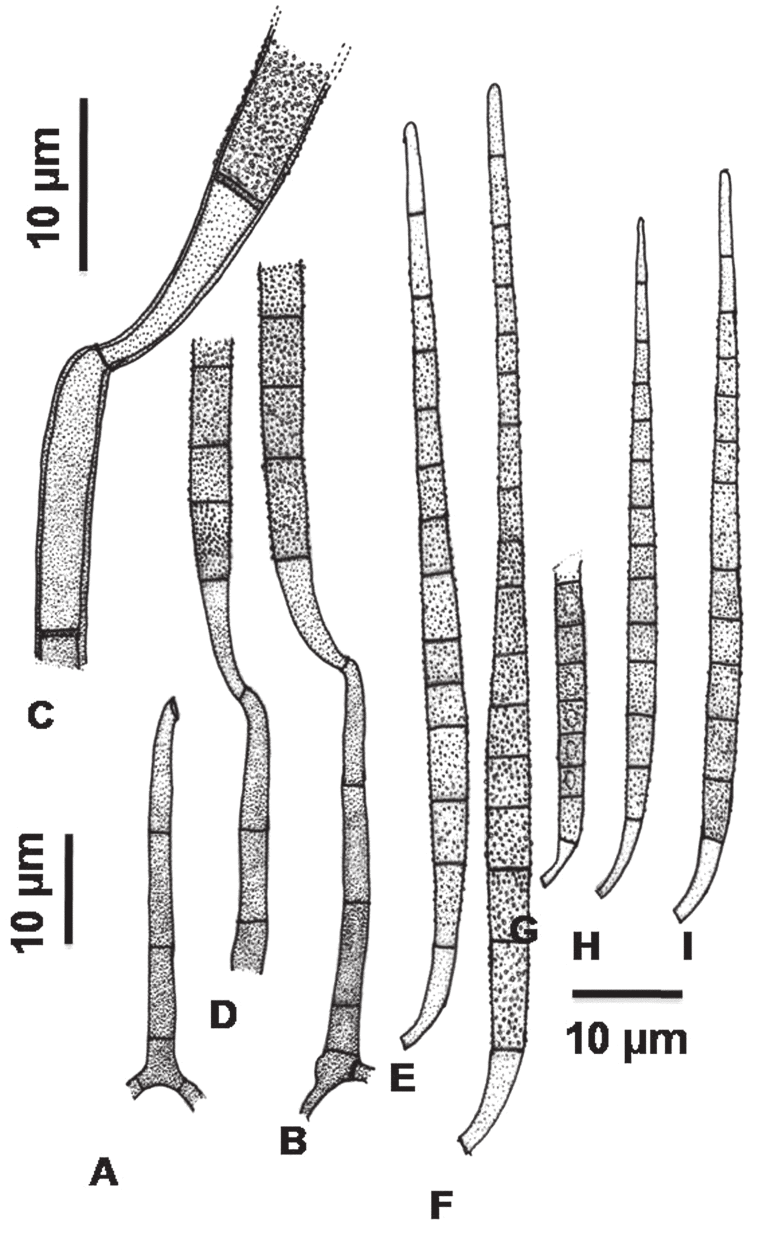

Fig. 1. *Anaverticicladus uncinatus* (ex holotype, URM 89939).
A, B. Conidiophores, conidiogenous cells, and conidium.
C, D. Conidiogenous cells and conidia section. E–I. Conidia.

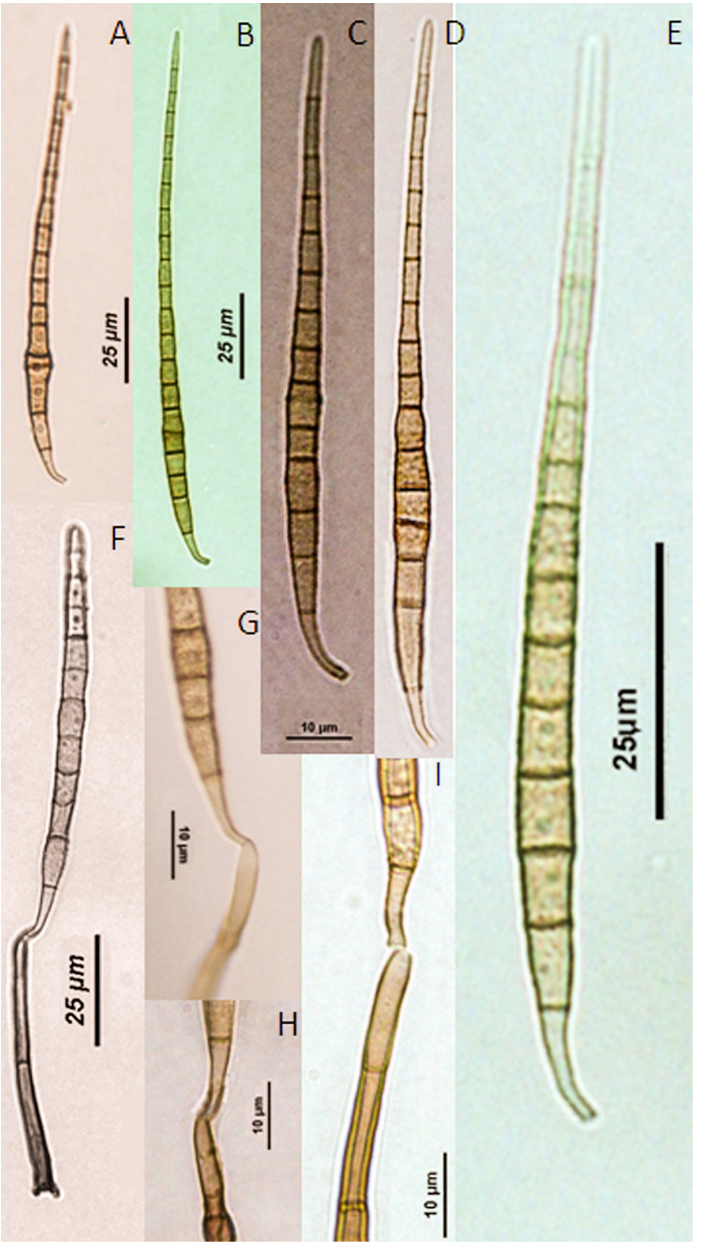

Fig. 2. *Anaverticicladus uncinatus* (ex holotype, URM 89939).
A–E. Conidia. F. Conidiophore, conidiogenous cells, and conidium.
G–I. Conidiogenous cells and conidia.

Comments: *Anaverticicladus* is superficially similar to *Mycofalcella* Marvanová et al., *Paraarthrocladium* Matsush., and *Verticicladus* Matsush., all of which have short differentiated conidiophores and a blastic conidial ontogeny but lack uncinate or curved conidiogenous cells near or just before the conidiogenous loci (Seifert et al 2011). *Mycofalcella* is distinguished by reduced unbranched to sparingly branched conidiophores and hyaline scoleco- or phragmoconidia with a basal appendage (Marvanová et al. 1993). *Paraarthrocladium* has unbranched or branched conidiophores, the conidiogenous cells are integrated and determinate or indeterminate with sympodial extensions, and all structures including the conidia are hyaline; and *Verticicladus* is characterized by almost verticillate branched conidiogenous cells and rhexolytic conidial secession (Matsushima 1993).

Acknowledgments

The authors express their sincere gratitude to Dr. De-Wei Li and Dr. Josiane S. Monteiro for their critical review of the manuscript. The authors are grateful to the "Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)" for financial support through project 88881.062172/2014-01 and the "Programa Ciência sem Fronteiras." RFCR is grateful to The Cuban Ministry of Agriculture and "Programa de Salud Animal y Vegetal", project P131LH003033 for facilities. We acknowledge the assistance provided by Dr. P.M. Kirk and Dr. V. Robert through the Index Fungorum and MycoBank websites. Dr. Lorelei Norvell's editorial and Dr. Shaun Pennycook's nomenclatural reviews are greatly appreciated.

Literature cited

Castañeda-Ruiz RF, Heredia G, Gusmão LFP, Li DW. 2016. Fungal diversity of Central and South America. 197–217, in: DW Li (ed.). Biology of microfungi. Springer International Publishing. http://dx.doi.org/10.1007/978-3-319-29137-6_9

Flora do Brasil. 2020. <http://floradobrasil.jbrj.gov.br/>. Accessed on 25 April 2016.

Matsushima T. 1993. Matsushima mycological memoirs no. 7. Matsushima Fungus Collection, Kobe, Japan.

Marvanová L, Om-Kalthoum Khattab S, Webster J. 1993. *Mycofalcella calcarata,* anam. gen. et sp. nov. Nova Hedwigia 56: 401–408.

Seifert K, Morgan-Jones G, Gams W, Kendrick B. 2011. The genera of hyphomycetes. CBS Biodiversity Series 9. 997 p.